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IBM.5195 PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	**Genduso *et al.***	Art Unit:	**2839**
Serial No.:	**09/008965**	Examiner:	**Prasad**
Filed:	**November 13, 2001**	Attorney Docket:	**RPS9-2001-0086-US1**
For:	**Connector Assembly Suitable for Connecting a Plurality of Signals to a Data Processing System**		

OFFICIAL

I, the undersigned Joseph P. Lally, hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the US Postal Service with sufficient postage as first class mail in an envelope addressed to: MAIL STOP AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

8/18/04
Date

Signature

AFFIDAVIT UNDER 37 CFR § 1.131

MAIL STOP AF
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

I, the undersigned inventor of the above referenced application, having been admonished that willful false statements and the like are punishable by fine, imprisonment, or both (18 U.S.C. § 1001) and may jeopardize the validity of the application or any patent issuing thereon, declare as follows:

I am an inventor of the above captioned patent application [the Application]. As indicated in the document attached hereto as Exhibit "A" entitled *Disclosure RPS8-2000-0266 (Probe Connector)* [the Disclosure], my co-inventors and I conceived of a probe connector that included the elements disclosed and claimed in the Application. As described in the Disclosure, the invention was workable at least as early as October 1, 2000. The conceived invention was documented via the Disclosure on or about November 16, 2000, submitted to a patent review committee, and ultimately drafted and filed on November 13, 2001 as the currently pending patent application.

I further declare that all statements made of my own knowledge are true and all statements made on information and belief are believed to be true.

Serial No. 09/018965
Art Unit: 2839
Docket: RPS9 2001 0086 US1

Thomas B. Genduso

Douglas M. Pase

Date

Aug 18, 2004

Date

EXHIBIT A

Disclosure RPS8-2000-0266

Prepared for and/or by an IBM Attorney - IBM Confidential

Created By: Thomas Genduso **Created On:** 11/16/2000 07:40:19 AM
Last Modified By: wpts1 wpts1 **Last Modified On:** 04/19/2001 02:01:04 PM

Required fields are marked with the asterisk (*) and must be filled in to complete the form.

***Title of disclosure (in English)**

Probe Connector

Summary

Status	Final Decision (File)
Docket Family	RPS9-2001-0088
Processing Location	RPS
Functional Area	SERVER
Attorney/Patent Professional	Martin McKinley/Raleigh/IBM
IDT Team	Courtney Long/Raleigh/IBM; Janice Mckoy/Raleigh/Contr/IBM; Paul Benson/Raleigh/IBM; Dave Challener/Raleigh/IBM; Scott Dunham/Raleigh/IBM; Rick Dayan/Raleigh/IBM; Ben Grimes/Raleigh/IBM; Howard Locker/Raleigh/IBM; Andy McNeill/Raleigh/IBM; Jerry Pearce/Raleigh/IBM; Joseph Lee/Raleigh/IBM
Submitted Date	11/16/2000 08:02:58 AM EST
Owning Division	PSG
Incentive Program	
Lab	
Technology Code	
PVT Score	No PVT score has been calculated.To calculate a PVT score, press the 'Calculate' button.

Inventors with a Blue Pages entry

Inventors: Thomas Genduso/Raleigh/IBM, Douglas Pase/Raleigh/IBM

Inventor Name	Inventor Serial	Div/Dept	Inventor Phone	Manager Name
> Genduso, Thomas B.	651478	29/4SEA	441-5918	Kossman, Harold F (Hal)
Pase, Douglas M.	984996	44/J39A	441-6172	Vu, K.V. (Ken)

> denotes primary contact

Inventors without a Blue Pages entry

IDT Selection

Select Functional Area

IDT Team: Attorney/Patent Professional:

RPS8-2000-0266 Probe Connecto. ..ontinued

Courtney Long/Raleigh/IBM Janice Mckoy/Raleigh/Contr/IBM Paul Benson/Raleigh/IBM Dave Challener/Raleigh/IBM Scott Dunham/Raleigh/IBM Rick Dayan/Raleigh/IBM Ben Grimes/Raleigh/IBM Howard Locker/Raleigh/IBM Andy McNeill/Raleigh/IBM Jerry Pearce/Raleigh/IBM Joseph Lee/Raleigh/IBM	Martin McKinley/Raleigh/IBM

Response Due to IP&L : 12/16/2000

***Main Idea**
To view the main idea for this disclosure, click on this doclink --->📄 **(If you are prompted to enter a server name, please enter D01DB016)**

***Critical Questions (Questions 1-9 must be answered in English)**

***Question 1**
On what date was the invention workable? 10/01/2000 **Please format the date as MM/DD/YYYY**
(Workable means i.e. when you know that your design will solve the problem)

***Question 2** ○ Yes ● No
Is there any planned or actual publication or disclosure of your invention to anyone outside IBM?

If yes, Enter the name of each publication or patent and the date published below.
Publication/Patent:
Date Published or Issued:

Are you aware of any publications, products or patents that relate to this invention? ○ Yes ● No

If yes, Enter the name of each publication or patent and the date published below.
Publication/Patent:
Date Published or Issued:

***Question 3** ○ Yes ● No
Has the subject matter of the invention or a product incorporating the invention been sold, used internally in manufacturing, announced for sale, or included in a proposal?

Is a sale, use in manufacturing, product announcement, or proposal planned? ○ Yes ● No

If Yes, identify the product if known and indicate the date or planned date of sale, announcements, or proposal and to whom the sale, announcement or proposal has been or will be made.
Product:
Version/Release:
Code Name:
Date:
To Whom:
If more than one, use cut and paste and append as necessary in the field provided.

RPS8-2000-0266 Probe Connecto. ..ontinued

*Question 4 Was the subject matter of your invention or a product incorporating your invention used in public, e.g., outside IBM or in the presence of non-IBMers?	○ Yes ● No
If yes, give a date. **Please format the date as MM/DD/YYYY**	

*Question 5 Have you ever discussed your invention with others not employed at IBM?	○ Yes ● No
If yes, identify individuals and date discussed. Fill in the text area with the following information, the names of the individuals, the employer, date discussed, under CDA, and CDA #.	

*Question 6 Was the invention, in any way, started or developed under a government contract or project?	○ Yes ● No ○ Not sure
If Yes, enter the contract number	

*Question 7 Was the invention made in the course of any alliance, joint development or other contract activities?		○ Yes ● No ○ Not Sure
If Yes, enter the following:		
	Name of Alliance, Contractor or Joint Developer	
	Contract ID number	
	Relationship contact name	
	Relationship contact E-mail	
	Relationship contact phone	

*Question 8 Have you, or any of the other inventors, submitted this same invention disclosure or similar invention disclosure previously?	○ Yes ● No
If Yes, please provide disclosure number below:	

*Question 9 Are you, or any of the other inventors, aware of any related inventions disclosures submitted by anyone in IBM previously?	○ Yes ○ No
If Yes, please provide the docket or disclosure number or any other identifying information below:	

Question 10
What type of companies do you expect to compete with inventions of this type? *Check all that apply.*

- [x] Manufacturers of enterprise servers
- [x] Manufacturers of entry servers
- [x] Manufacturers of workstations
- [x] Manufacturers of PC's
- [ ] Non-computer manufacturers
- [ ] Developers of operating systems
- [ ] Developers of networking software
- [ ] Developers of application software
- [ ] Integrated solution providers
- [ ] Service providers
- [ ] Other (Please specify below)

Question 11
If the invention relates to a product or service that is outside the scope of your business unit, please recommend IBM business unit(s), IBM location(s) or individual(s) within IBM that you think would provide a good evaluation of your invention:

Patent Value Tool (Optional - this may be used by the inventor and attorney to assist with the evalua
(The Patent Value tool can be used by the inventor(s) to determine the potential licensing value of your invention.)
No PVT score has been calculated. To calculate a PVT score, press the 'Calculate' button.

Market
What is the anticipated annual market size (in dollars) that will be captured by your invention?

CLAIMS
Question 1 - How new is the technical field?

Question 2 - How central is the invention to the product(s) which might be expected to contain the invention?

Question 3 - What is the scope of the claim?

PORTFOLIO NEED
What are the portfolio needs in the area of your invention?

EXPLOITATION & ENFORCEMENT
Question 1 - How easily can the use of the invention by a competitor be detected?

Question 2 - How easily can the use of the invention be avoided by a competitor?

BUSINESS VALUE
Question 1 - What percentage of the companies producing products in the field of this invention might use this invention?

Question 2 - What is the value of this patent to current or anticipated Alliance Activity between IBM and other companies?

Question 3 - What is the value of this patent to current or anticipated Technology Transfer Activity between IBM and other companies?

Question 4 - Does it result in prestige to IBM?

Evaluation

This evaluation was entered by **Courtney Long/Raleigh/IBM** on **12/07/2000**
Team Evaluation What is the team's evaluation of this disclosure? Search
Date rated : 12/04/2000
Evaluation Comments

Final Evaluation History:	Who made the final evaluation:	Final evaluation date:
Search	Courtney Long/Raleigh/IBM	12/4/00

Search Information

Date sent: 12/14/2000	*Target completion date: 01/15/2001	Search Results Received date: 01/15/2001
Who was the search sent to (This area is to designate a Local Searcher name or WAIPL): Abdi Dirie/Arlington		
*Search Type: ☒ Patentability ☐ Clearance ☐ Validity ☐ State of Art		
*Features to be searched: see main idea of invention disclosure		

Search Office Information

Target completion date: 01/15/2001	☐ Search has been delayed	Ship/Return date: 01/12/2001
Search Conducted By Via		
Comments		

Final Decision

This decision was entered by **Amirah Scarborough/Raleigh/IBM** on **06/29/2001**

Decision: File	Status: N/A
PPM Area: 200 - Computer Architecture	Attorney Rating: 2
Date of Final Decision : 06/29/2001	

Additional filing information

Planned Filing date:
Filing comments:

Dates have been entered in the format MM/DD/YYYY

Additional decision comments

Final Decison History

Entered on 29-Jun-2001 by Amirah Scarborough

RPS8-2000-0266 Probe Connecto. ontinued

File N/A 29-Jun-2001 Docket Family: RPS920010086

Post Disclosure Text & Drawings
Enter any additional information relating to this disclosure below:

(Form Revised 12/17/97)

Main Idea for Disclosure RPS8-2000-0266

Prepared for and/or by an IBM Attorney - IBM Confidential

Archived On: 12/08/2000 01:03:18 AM

Title of disclosure (In English)

Probe Connector

Idea of disclosure

1. Describe your invention, stating the problem solved (if appropriate), and indicating the advantages of using the invention.

Today's PCI type adapter cards are becoming more sophisticated and more powerful. Whereas the PCI cards in the past tended to support a single function and a single external interface, more and more of today's adapter cards are capable of supporting multiple interfaces. For example today's Trombone SCSI controller has the capability of supporting 4 SCSI channels and therefore has 4 SCSI external connector on the card. As PCI adapters continue to increase in performance and functionality a problem is beginning to arise. Given the amount of space the external connectors require, the number of connection an adapter can support may not be limited by the performance of the adapter. Rather the limiting factor is becoming the amount of area that is available to attach external connectors to the PCI adapter cards. This problem will be most acute where the type of interface which is being supported by the adapters is a 'high pin count' interface such as SCSI. Also associated with the large edge type connectors is the physical connection and the locking mechanism necessary to attach the connector to the card, such that the connection will be secure during operation.

In order to address this problem, the design of alternative connection system is disclosed here. The system is referred to as the probe connector and is composed of two key components :

- The receptacle - This is the part of the connection system which be would incorporated into the PCI adapter card. The receptacle is the socket or 'female' portion of the connection system.
- The probe - This is the part of the connection system which would be incorporated into the cable which would connect to the PCI adapter card. Using a plug and receptacle analogy, the probe is the plug or 'male' portion of the connection system.

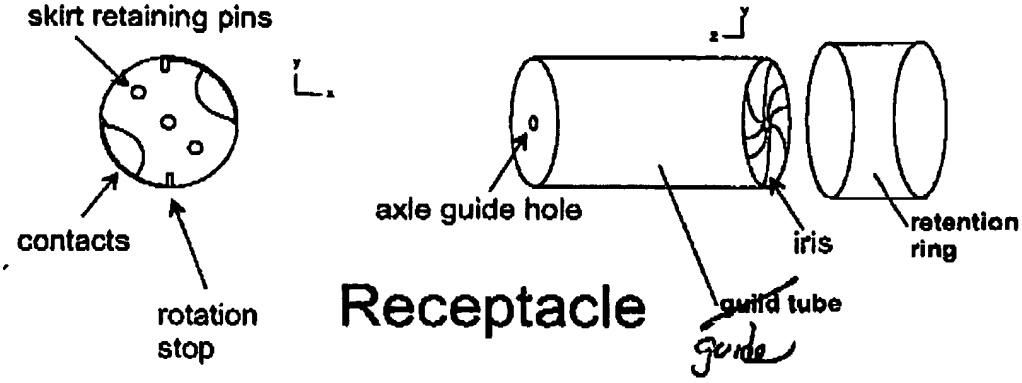
Fundamentally what is unique about this system that it reduced the amount of surface area required by making the necessary electrical connections in z plane (into the internal physical space of the adapter) rather than in only the x-y plane of the surface of the face plate of the PCI adapter card.

This design allows a greater number of physical connections to be made with a single adapter. Also the number of electrical connections per connector is not limited by the amount of physical surface area of the PCI adapter card.

2. How does the invention solve the problem or achieve an advantage.(a description of "the invention", including figures inline as appropriate)?

As stated previously, this invention has two main components

- The receptacle or socket component
- The probe or plug component



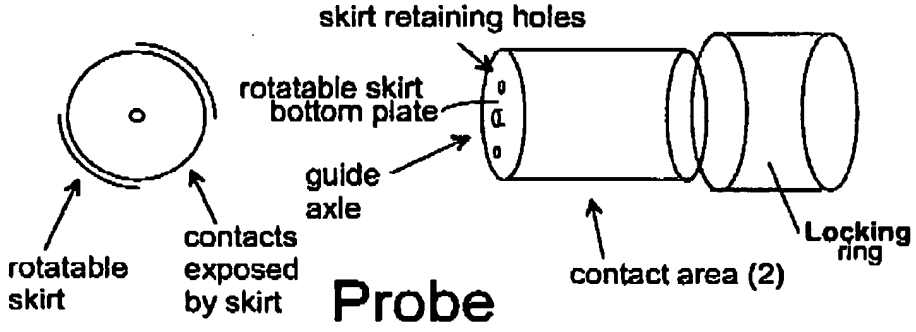
backlite

plug

The above figure is a drawing of the receptacle. The following are a number of key features.

- The receptacle has guild tube and the actual opening into the receptacle is covered by an iris.
- A retractable iris protects the contacts from dirt and foreign objects within the receptacle

- The guile tube provide stability of motion in the z-axis during insertion
- Special axle guides to provide stability of motion in rotation around the z-axis during locking
- Two sets of connector contacts along inside surface of the guild tube along the axis of rotation.
- A locking mechanism, similar to the locking mechanism used in the BNC type coaxial connector, is incorporated into the retention ring. This type of mechanism provides positive locking to securely maintain contact when the probe is in position in the receptacle.



The above illustration shows the probe and the following are a number of key features of the probe

- The probe is keyed with two notches.
- Rotating skirts to protect the contacts of the male portion of the plug when not in use
- Multiple contacts in the plane of rotation (along the z axis) for efficient use of space

- A guide axle which, when the probe is fully inserted into the receptacle engages into the axle guide hole of the receptacle. Engagement of the axle to the axle guide hole facilitates the rotation of the probe in the receptacle. Rotation of the probe in the receptacle does three things
  - Exposes the contact from beneath the rotatable skirt.
  - Engages the contacts of the probe to the receiving contacts of the receptacle.
  - Locks the probe into the receptacle.
- A BNC like locking ring to allow positive locking of the probe to the receptacle while the connector is in use.

Description of operation

When the probe is initially inserted into the receptacle, there are two notches on the probe which are keyed to two raised surfaces within the guild tube of the receptacle. Once the probe is partially inserted, it is turned one quarter turn in the clockwise direction. This action causes the iris of the receptacle to open which allows the probe to be inserted the rest of the way into the receptacle. Once the probe is inserted all the way in it is rotated one quater turn in the counterclockwise direction. This action causes the connections of the probe to be uncovered and to mate with the matching connection along the guild tube of the receptacle. This action also causes the probe to be locked into place by means of pins on the outside circumference of the guild tube and a groove on the collar of the connector. This is similar to the locking mechanism of a BNC type coaxial connector.

The probe is removed from the receptacle by rotating the probe one quater turn in the clockwise direction. This action causes the probe to be unlocked from the receptacle. This action also causes the connections of the probe to disengage from the matching connection along the guild tube of the receptacle and the connection of the probe to be covered by the rotate able skirt. The probe is removed from the receptacle. The complete removal of the probe from the receptacle causes the iris of the receptacle, which is spring loaded, to close.

3. If the same advantage or problem has been identified by others (inside/outside IBM), how have those others solved it and does your solution differ and why is it better?
To our knowedge the altenative solutions tend towards the use of optics, which tend to be a very costly solution

4. If the invention is implemented in a product or prototype, include technical details, purpose, disclosure details to others and the date of that implementation.
Invention has not been implemented